

Bird Surveys and Field Studies Belltrees, May 4-6 2010



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Belltrees, a large (~9,000 ha) cattle property situated approximately 35km east of Scone, has an important place in the history of Australian ornithology. However, in recent decades, this part of the Hunter Region has received relatively little attention. Much of the Belltrees property is cleared but there are several remnant woodland patches. For the fieldwork at Belltrees, it was decided to focus on making repeat visits to a small number of pre-selected sites to conduct 500m area surveys in teams, with time of day and team technique being two of the variables for the surveys.

Belltrees is private property and we obtained permission from the owners to be there.

Methods

The Birds Australia 500m area survey method was used on this occasion with 4 sites selected. Details about the survey sites are listed in Table 1 below, and are also indicated on the accompanying map (Figure 1). An overall list of species was also compiled each day, in order to capture the birds seen around the campsite and in transit between sites. This latter was treated at the time as a 5km area survey; however, this resulted in a lot of duplication of data. Subsequently, the campsite data have been de-convoluted from the overall data to derive a 5th 500m survey area.

Table 1. The 500m area survey sites

Site ID	Coordinates (WGS)	General description
Belltrees B1 (Dry Ridge")	31° 59' 34" 151° 05' 43"	An extensive patch of dry woodland at the top of a ridge overlooking the Hunter River. Although surveyed down to the river, most records were from around the top of the ridge.
Belltrees B2 (Stony Creek")	31° 58' 19" 151° 07' 20"	Mixture of open paddocks and remnant woodland with minor under-storey, and riparian habitat.
Belltrees B3 (“Sugarloaf”)	31° 59' 28" 151° 08' 18"	Dry woodland with minor under-storey, and a small dam.
Belltrees B4 (“River Walk”)	32° 00' 10" 151° 07' 29"	Riparian habitat and open paddocks with little vegetation except immediately adjacent to the Hunter River.
Belltrees B5 (“The Camp”)	31° 59' 13" 151° 07' 18"	Open paddocks (with stock), farm buildings, some trees, and no under-storey.

Teams of 4-6 people (in most cases, 5 people) conducted each survey at sites B1-B4. The results for B5 were from observations by all 15 participants. Three sites (B1, B2 and B4) were surveyed late afternoon of 4 May, and sites B1-B4 were surveyed in the mornings of 5 May and 6 May. In those cases, either B3 or B4 was surveyed later in the morning. The teams mostly stayed together to do the surveys, except on the morning of 5 May when the teams were requested to break into small groups so as to cover a greater portion of the survey area simultaneously.

Results and Discussion

In total, 79 species were recorded at Belltrees over the 3 days of surveying. The site by site results are in Table 2. Reporting Rates have not been calculated; the small sample size, and considerable variations in site habitat, time of survey, and survey technique, seemingly preclude any significant meaning being able to be attached to RR's in this particular instance (although some species clearly were more widely distributed, and abundant).

A characteristic of the surveys was that many birds were present in mixed foraging flocks, and generally these flocks were only briefly encountered during any given survey period.

The B2 site was richest in bird life, followed by B1. Since B2 had the most diverse range of habitats of any of the sites, this is perhaps not surprising. 52 species were recorded there on 5 May and 40 species on 6 May, totalling 275 birds and 266 birds respectively. Although daily variations are to be expected, due to many factors, the difference in number of species on the two days may in part reflect the change in survey technique – the team on 5 May sub-divided (as requested) whilst the team on 6 May stayed together (as requested). Perhaps a similar interpretation can be made for the B1 site: 43 species (275 birds) were recorded on 5 May by a team which sub-divided, and 29 species (130 birds) on 6 May by a team which stayed together for much of the time. B1 was a much steeper site and it was the case for all teams that some team members did not descend very far below the ridge line; also, this site received far less overall survey coverage than the other sites because of the combination of topography and denser vegetation.

Site B3 was visited by two teams early in the mornings of 5 May and 6 May (from approx 7:45 to 9:15) with both teams sub-dividing. 50% more species were recorded in the first survey than in the second survey, for reasons that are not clear. On 5 May, another team visited the B3 site late morning (10:50 to 11:40) and the visit was even less productive (11 species compared to 33 species) than the early morning visit even though the team also sub-divided. Although the survey period was shorter for the second visit, it seems unlikely that this could account for much of the 2/3 decline in species recorded. Site B3 was characterised by the presence of a very large population of Noisy Miners (up to 60 birds were present at the site; the other sites had far fewer Noisy Miners).

The influence of time of day is also apparent from comparing the results for late afternoon surveys and early morning surveys at the B1 and B2 sites. In both cases, more species were recorded in the morning surveys (43 species compared to 30 species at B1; 52 species compared to 23 species at B2) and the overall numbers of birds were also much greater in the morning surveys.

Site B4 was also surveyed late afternoon and early the following morning, with very little difference in the outcomes. Possibly, this reflects the more limited, and more open, nature of the habitat at B4, such that the relatively few species present were less likely to be overlooked.

Conclusions

The surveys at Belltrees showed the property supports a considerable variety of birdlife. However, many small passerine species were not present in large numbers nor were they widely distributed.

The number of species recorded, at the dry woodland sites, was dependent on the time that the survey was conducted, with more species (and in greater numbers) being present in the early morning surveys. It is a matter for conjecture whether this relates at all to the known autumn-winter behaviour, that birds often form into mixed feeding parties and forage together over large areas. Afterwards, perhaps they disperse into smaller and less obvious groups.

Some Other Learnings

- Most participants were unfamiliar with the sites and it was found to be very useful to have travelled in a group before the surveys commenced, so that everybody could physically identify the sites. It would perhaps have been even more valuable to have had a group discussion at each site about how the surveys would be conducted at that site – this would also reinforce some aspects of the site location and the site boundaries.
- The making of repeated visits to the same site was a mixed success. Although there were several useful findings, there was diminishing enthusiasm by teams to visit sites that other teams had found to be not highly productive. Plans for “serious studies” also need to be balanced to accommodate the widely-held desire of participants to see “the good birds” – ample free time should be built into programs to allow for this.
- Although written instructions were handed out at the beginning, and discussed with participants at that time, it is probably advisable to refresh memories at regular intervals. Communications amongst a group of 15 people are not straightforward.
- The ideal situation for handling organisational matters *including the data collection & collation*, may well be to have one person who does not participate in the surveys but rather, is dedicated to the administrative aspects. However, it may be difficult to find such a volunteer.
- The concept of defining a 5km survey area around the campsite was intended such that all sightings from outside of the 4 designated survey sites could be captured. However, this led to considerable duplication of data and was not valuable. On future field studies involving a campout, it may be better to designate the campsite as another 500m survey area, and forgo the handful of records that fall between the gaps in doing this (the problem can be addressed by putting in Incidental Records for the more significant of those observations).

Participants: Alan Stuart, Mike Newman, Greg Newling (days 1-2), Lorna Mee, Jim Smart, Penny Drake-Brockman, Max Blanch, Ann Lindsey, Joy Nicholls, Trevor Jurd, Judy Westphal, Anthony Gooden, Neville McNaughton, John Cockerell (days 2-3), Pat Mackay (visitor from Canada).

Table 2. Species recorded at the survey sites

Species	4 May		4 May		5 May		5 May		5 May		5 May		6 May		6 May		6 May	
	B1	B2	B4	B5	B1	B2	B3	B3	B4	B5	B1	B2	B3	B4	B5	B1	B2	B5
No of birds	3:10-4:50	3:10-4:30	3:00-4:40	9:00-6:00	7:45-9:45	7:45-9:45	7:50-9:10	10:50-11:40	10:10-12:00	6:00-6:00	7:45-9:30	7:45-9:45	7:50-9:15	9:30-10:30	6:00-2:00			
Australian Wood Duck	30	23	26	26	43	52	33	11	27	27	29	40	22	25	26			
Pacific Black Duck	117	230	189	182	275	508	183	94	88	266	130	266	277	191	223			
Common Bronzewing		6	8	4		6	3		3	50			4	3	2			
Crested Pigeon		1				3						1	7					
Little Pied Cormorant		5	15	5		30	9	1	3			25	12					3
White-faced Heron		2	2			2	1		1			3		2	1			
White-bellied Sea-Eagle			4	2					2	1				2				
Brown Goshawk									1			1						1
Wedge-tailed Eagle	2	3	3	1		3	2	1		1		2						1
Nankeen Kestrel	1		2			1	1		1					2				1
Brown Falcon		1	1															1
Australian Hobby			1		1											1		
Dusky Moorhen				1														
Black-fronted Dotterel							1											
Masked Lapwing				6		2	4						4					2
Galah		120	10	20	2	9	15	5	2	10		40	23					15
Sulphur-crested Cockatoo				30		2	2		2	20			2	2				16
Musk Lorikeet																		2
Australian King-Parrot						2							1					
Crimson Rosella	3				2							2	2					
Eastern Rosella	1	4	20	5	7	20	10	12	1	10	3	20	22	6	5			
Red-rumped Parrot		2	4									40						20
Fan-tailed Cuckoo					1													
Laughing Kookaburra			1			1							2					
White-throated Treecreeper	1	1			10	2						1						
Satin Bowerbird			1			1	2		1				1					
Superb Fairy-wren	10		15	5		25	10		16			2	4	30	9			
White-browed Scrubwren	5					1						2						
Speckled Warbler	2				1	6												
Weebill	15				15	40						5						
Striated Thornbill					10	10												
Yellow Thornbill	6				5	25							2					
Yellow-rumped Thornbill	2		25	3	12	50	4		4	10	12	15		60				
Buff-rumped Thornbill	10				20	30												
Brown Thornbill	1				2	1												
Spotted Pardalote	4	1			4	10						4	2					
Striated Pardalote	15	4		1	18	35	7	4	2	4	24	10	7					
Eastern Spinebill		2	1		2	2	5		3		1	2						
Lewin's Honeyeater						1												
Yellow-faced Honeyeater	6	1			50	6	2		1		2	1						
White-eared Honeyeater	2				8	7					2	3						
White-plumed Honeyeater	1				30	5	1		1		5							
Noisy Miner	4	12	10	4	6	30	36	60	5	15	1	30	60	15	10			
Red Wattlebird						2	22											
Brown-headed Honeyeater					3	25						15						
Noisy Friarbird	1			3	1						12		70					
Grey-crowned Babbler							6						8					
Varied Sittella	2				3													
Black-faced Cuckoo-shrike	2		3	2	12				2	2	1	3		3				
Golden Whistler	2				2									1				
Rufous Whistler					1	2												
Grey Shrike-thrush		1	1		1	3	1		1				2					
Olive-backed Oriole					1					1								
Grey Butcherbird		2	1		2	7	3	2	1	1	2	2	2	1				
Pied Butcherbird			5	1	1	2	1	1	6	2		1	2					1
Australian Magpie	1	33	20	6	2	13	9	5	5	3	25	10	4	6				
Pied Currawong	7	3	3	7	4	1	4	2		4	4	3	3	3	3			
Grey Fantail	3				5	7					1	1						
Willie Wagtail	3	2	8	7	6	2	4		4	4	4	6	1	4	5			
Australian Raven		6			2	13	3		5	8	12	4	3	3				
Little Raven							2		6				5	5				
Leaden Flycatcher					1													
Restless Flycatcher				1		3				1		1						1
Magpie-lark	2	3	10	5	1	8	1	1	6	2	1	4	2	4	6			
White-winged Chough		15				30						10	15					
Jacky Winter					3	2				2	2	2						
Scarlet Robin					1	3												
Flame Robin						2							5		3			
Eastern Yellow Robin											1	1						
Silvereye	2				8	2					6							
Welcome Swallow			15	10					5	10		2		3	15			
Tree Martin				6						8					8			
Common Starling				40						50					80			
Common Myna				6						6				5	5			
Mistletoebird					1	1	3		2		1	1						
Double-barred Finch	1				4	6					7	4						
Red-browed Finch					4	5	6		6									25
Diamond Firetail						3												
Australasian Pipit				1										2	2			

